DEFENSE ADVANCED RESEARCH PROJECTS AGENCY
SENSOR TECHNOLOGY OFFICE (STO)
PLANNED PROCUREMENTS
May 1998

PROGRAM DESCRIPTION	FUNDING	SCHEDULE	PROGRAM MGR
Adaptive Spectral Reconnaissance Program (ASRP): The goal of the ASR Program is to demonstrate an unmanned, airborne, hyperspectral-sensor system (HSS) that can detect and image difficult targets in real time. The objective is to enable broad-area search capability against camouflaged targets and other targets that are difficult to detect, through the use of spectral imaging and other imaging technologies. The ASR System is required to produce continuous, fine-resolution, hyperspectral data and process this data real-time for high-resolution sensor cueing. The real-time, on-board processor shall implement Government-provided detection algorithms for processing the visible to near infrared, short wave infrared, and long wave infrared hyperspectral images produced by the HSS. The primary data product, the high-resolution image cued from the ASR System, will be sent to a ground station control and display facility via the data link. The secondary data product, a hyperspectral cube of the detected region, will also be sent to the ground for further analysis. During the prototype system build phase, the selected contractor team will develop/build the hyperspectral sensors and high-resolution imagers, the processor, on-board data recorders, the data link and communications system, and the ground station facilities. The government will furnish the algorithms and the integrating manned/unmanned UAV surrogate airframe. The ASR System shall be compatible with the Predator UAV or the Aerial Recce Low platform. For this effort, it is anticipated that the testbed aircraft shall be the Aerial Recce Low aircraft or the Altus UAV. The contracting organization will be US Army CECOM/NVESD.	$10M	RFP 3QFY98 Total program: 3 years	LTC Brad Tousley STO

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Multi-Spectral Exploitation Testbed: The increased utility of computer-assisted exploitation of microwave synthetic aperture radar (SAR) images has been demonstrated on the Semi-Automated IMINT Processing (SAIP) ACTD. There is a strong need to expand this capability to include other image intelligence sensors, including multispectral imagery, hyperspectral sensors, and foliage penetration SAR. The objective of this program is to build on the SAIP architecture to obtain the following: (1) improved human computer interface for exploitation and interpretation of multispectral images; (2) geolocation and rectification of images from several platforms with different spatial and spectral resolutions; (3) semi-automated target detection and cueing between spectral bands to enhance target classification; and (4) interoperability with Common Ground/Surface System datalink and image exploitation architecture. The results wil be demonstrated with operational user exercises against tactical targets to validate projections of image exploitation effectiveness.	$10M	BAA 3QFY98 Total program: 1-3 years	Dr. Mark Davis STO

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Advanced Tactical Targeting Technology (AT3): This program will demonstrate a passive tactical targeting system for the lethal suppression of enemy air defenses (SEAD). Today's threat radar targeting systems employed for SEAD fail to provide the rapid and accurate emitter geolocation needed to replace dedicated anti-radiation missiles (ARM) with generic, shoot-to-coordinate, smart weapons (e.g., JDAM or JSOW). The targeting system must negate emitter shutdown tactics now employed to defeat ARM guidance and enable simplified ordnance inventories. Generation and distribution of near real-time (e.g., seconds), comprehensive, and highly precise location of threat radars to all theater combatant aircraft is required without deploying any extra, SEAD-dedicated, emitter collecting platforms. AT3 will accomplish this by widely deploying emitter collection packages hosted on existing airborne platforms, including combatant aircraft. AT3 will integrate (fuse) in real-time the distributed multi-platform emitter collections using existing or planned tactical (narrowband) radios with advanced networked management (data packets) and signal processing. Additionally, to achieve the necessary wide deployment, AT3 self-contained collection packages must impose negligible burden on their airborne hosts and be available at affordable prices. Enabling technologies now in development at DARPA will be used in AT3. These technologies include: highly agile digital receivers packaged in multichip modules, highly precise tactical clocks, tightly coupled integrated GPS/INS packages, and advanced, highly dynamic data-fusion network-management capabilities. Critical system advancements are: generating the commonly registered, theater-wide, absolute Doppler corrections to collected data and managing the extraordinarily dynamic, real-time data network including individual user kinematics and a changing aggregate participating user population.	$25M	PRDA 3QFY98 Total program: 3 years	Lt Col Beth Kaspar STO